



QS-R-007
REVISION B

EFFECTIVE DATE: September 09, 2002

ORGANIZATIONAL ISSUANCE

LIMITED LIFE ITEMS

OPR (s)

OPR DESIGNEE

QS10, QS20, QS30,
and QS40

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VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

Organizational Issuance		
Title: Limited Life Items	QS-R-007	Revision: B
	Date: September 9, 2002	Page 2 of 7

DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		11/20/97	
Revision	A	7/1/99	Changes made to reflect new organization code changes and/or Changes made to reflect new directives renumbering scheme
Revision	B	9/09/02	Format and numbering change to implement requirements of QS-A-001 rev F.

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Organizational Issuance		
Title: Limited Life Items	QS-R-007	Revision: B
	Date: September 9, 2002	Page 3 of 7

Limited Life Items

1. SCOPE

1.1 Scope

This Organizational Work Instruction (OWI) is applicable to preparation of Marshall Space Flight Center (MSFC) Limited Life Items (LLIs) for design, development, and operation phases of all flight hardware and Ground Support Equipment (GSE). This OWI also provides evaluation guidelines for reviewing and approving LLI.

1.2 Purpose

The purpose of this OWI is to provide procedures that shall be used in the identification, evaluation, and approval of Limited Life Items.

1.3 Applicability

This OWI is applicable to all MSFC projects that require identification and maintenance of Limited Life Items.

2. Applicable Documents

ANSI/ISO/ASQC A8402-1994	<i>Quality Management and Quality Assurance - Vocabulary</i>
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3. Definitions

All definitions applicable to this OWI are addressed in the following documents:

ANSI/ISO/ASQC A8402-1994	<i>Quality Management and Quality Assurance - Vocabulary</i>
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Specific definitions follow:

Limited Life Items are those items designated as having a limited useful life regardless of whether it is a limited operating life, limited shelf life, operating life sensitive or a combination of these.

Organizational Issuance		
Title: Limited Life Items	QS-R-007	Revision: B
	Date: September 9, 2002	Page 4 of 7

Limited Operating Life Items are those items which deteriorate with increased accumulation of operating time/cycles and thus require periodic replacement or refurbishment to assure that operating characteristics have not degraded beyond acceptable limits including consideration for total mission time/cycles and safety factor margins.

Limited Shelf Life Items are those items which deteriorate with the passage of time and thus require periodic replacement, refurbishment, retesting or operation to assure that its operating characteristics have not degraded beyond acceptable limits. This includes installed as well as stored components.

4. Instructions

4.1 Developing a Limited Life Items List

The Limited Life Items List is a consolidated list of all program hardware which exhibits quality degradation or drift with age or use (cycling). System or component designers must identify limited life hardware to allow determination of project maintenance and logistic support requirements.

Where an LLI List is required by the project, the project S&MA representative shall request data from the design organization to compile the LLIL. Data required for the LLIL is specified in the following paragraph.

No standard format is required, however, the list should be organized in a logical and easy to follow manner.

4.2 LLI List Contents

The LLI List shall identify all program hardware which exhibit characteristics of limited life. For each limited life item the following data shall be provided:

- a. Limited Life Item nomenclature/name/part number
- b. Next higher component nomenclature/name/part number
- c. System or subsystem
- d. Life limiting characteristic (i. e. cycles, time, etc.)/Life limit
- e. Action required at end of life (i. e. remove and replace, calibrate, etc.)
- f. Means of tracking life
- g. Estimated useful life remaining at launch

Organizational Issuance		
Title: Limited Life Items	QS-R-007	Revision: B
	Date: September 9, 2002	Page 5 of 7

4.3 LLI Review/Evaluation

LLIs shall be reviewed and evaluated in accordance with the requirements of this OWI. Data specified in paragraph 4.2 shall be provided for each limited life item.

4.4 LLI List Approval

LLI Lists shall be approved in accordance with project requirements.

5. Notes

The requirement for development of a Limited Life Items List shall be based on the nature of the project. Hardware designed for multiple missions will pay particular attention to requirements to remove and replace hardware due to life limits. Limited life components may impact the hardware design for maintainability. In general, expendable hardware in which all components exceed mission life requirements will not require an LLI List.

5.1 Directive Replacement. This Directive replaces S&MA-CR10-R-Y-007, Limited Life Items

6. Safety Precautions and Warning Notes

Not Applicable

7. Appendices, Data, Reports, and Forms

Design information required for developing the Limited Life Items List shall be obtained from design engineers, engineering drawings, project specifications, material specifications and other applicable project documentation.

8. Quality Records

None

Note: Copies of Baseline Limited Life Items Lists are maintained by the specific Projects.

Organizational Issuance		
Title: Limited Life Items	QS-R-007	Revision: B
	Date: September 9, 2002	Page 6 of 7

9. Tools, Equipment, And Materials

Not Applicable

10. Personnel Training And Certification

Reliability training.

11. Flow Diagram

The flow diagram shown on the next page, indicates the sequence of operations to be followed when identifying, reviewing, or approving LLIs.

Organizational Issuance		
Title: Limited Life Items	QS-R-007	Revision: B
	Date: September 9, 2002	Page 7 of 7

